



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,451	09/08/2003	William P. Parker	B6603-0003	1455

7590 01/25/2005

James Marc Leas
37 Butler Drive
S. Burlington, VT 05403

EXAMINER

JUBA JR, JOHN

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,451

Applicant(s)

PARKER ET AL.

Examiner

John Juba, Jr.

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 20/7, 20/12, 20/17, 21-26 and 81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 20/2, 70-76, 78, 90, and 91 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/8/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Priority***

Applicants have not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. §119(e) and §120 as follows: An application in which the benefits of an earlier application are desired must contain a specific reference to the prior applications) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications. 37 CFR 1.78(a)(2)(i). See MPEP 202.01.

As provided under 37 CFR 1.78 (a)(2)(ii), the time period for submitting such a reference has expired. Applicants must submit a petition under 37 CFR 1.78(a)(3) and the surcharge under 37 CFR 1.17(t) in order for the office to accept the unintentionally delayed claim under §120.

Since the instant filing was not copending with prior provisional application serial number 60/030,962, benefit under §119(e) is only by way of prior non-provisional application serial number 08/972,464. Since Applicants have not satisfied the requirements of §120, they are not entitled to the benefit of the earlier filing of either prior application. See MPEP 201.11 (III)(B) & (III)(C).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3, 5, 20/2, 70 – 76, 78, 90, and 91 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Parker, et al (U.S. Patent Appl. Pub. no. 2002/0039209 A1). The cited reference is the pre-grant publication of parent application serial number 08/972,464 which forms the basis of the instant divisional application, and which thus supports all of the claimed subject matter in the context of 35 U.S.C. §112, first paragraph, in the same manner as the instant specification. Since Applicants have not perfected a claim for domestic priority, the effective filing date of the instant application is September 8, 2003 – more than a year after publication of the cited reference.

Claims 1, 2, and 75 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenaway (U.S. Patent number 3,602,570). Referring *for example* to the method implemented in Figure 2, Greenaway discloses a method of fabricating a holographic "mask" comprising the steps of

(a) providing an illumination source (200) for generating a coherent illumination beam (208) directed along an axis (O - O');

(b) providing a non-opaque object mask having a substantially planar, annular region (210) capable of transmitting a portion of said illumination beam as undiffracted reference wavefronts, the annular region (210) comprising any number of arbitrarily divided planar regions of arcuate wedge shape or narrower annular bands, the mask having one or more substantially transparent elements (216)(218) for creating overlapping object wavefronts when said illumination beam is incident thereon;

(c) disposing said object mask in said illumination beam [the planar regions and transparent elements are integrated into a single frame, and thus fairly constitute a "mask"(Col. 3, lines 43 - 52)];

(d) providing a holographic recording medium (214) in said illumination beam in line with said object mask;

(e) illuminating the object mask with said illumination beam , wherein said illumination beam directed along said axis causes said object mask to allow undiffracted reference wavefronts (212) to pass therethrough, and wherein said illumination beam directed along said axis causes said one or more substantially transparent elements (216)(218) to create object wavefronts which interact with said undiffracted reference wavefronts to create an interference pattern; and

(f) recording said interference pattern in said holographic recording medium.

With regard to claim 2, one of the transparent elements is a diffuser, which fairly constitutes a "scattering element" (Col. 5, line 10).

With regard to claim 75, the interference pattern is recorded in a continuous annular "active area" of the hologram plate (214) to form a "continuous diffracting region".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20/2, 5, 73, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenaway (U.S. Patent number 3,602,570). As set forth above for claims 1 and 2, Greenaway discloses the invention substantially as claimed. However, Greenaway does not expressly identify the one or more transparent elements in the embodiment of Figure 2 as phase-altering elements which are indentations in the object mask (claim 20/2) and does not disclose an array of transparent elements (claim 5). Rather, Greenaway discloses a transparent element as being a diffuser. In the discussion of the prior art, Greenaway teaches that "a sheet of ground glass" is a well-known diffuser construction useful in holographic recording (Col. 2, lines 66 – 70). Thus, it would have been obvious to one of ordinary skill to use a sheet of ground glass for the transparent element (216) of Greenaway, since a sheet of ground glass was well-known to be a useful diffuser suited to holographic recording, as suggested by

Art Unit: 2872

Greenaway. It will be appreciated that a sheet of ground glass comprises “indentations” which inherently shift the phase of light relative to the non-indented regions. When situated within the central opening of the mask, the transparent elements would thus have comprised a plurality of phase altering elements in the form of indentations in the phase mask.

With regard to claim 5, the examiner believes that the ordinary meaning of “array” is sufficiently broad so as to include any impressive number or collection of things, rather than being particularly limited to an orderly arrangement of things. As such, it is believed that the ground glass diffuser suggested by Greenaway fairly comprises an impressive number of indentations or, an “array” of transparent elements (indentations).

With regard to claims 73 and 74, Greenaway discloses the invention substantially as claimed. However, Greenaway does not disclose an optical density between 0.1 and 5.0 (claim 73) and does not disclose a beam intensity ratio between 0.1:1 – 100:1 (claim 74). Nonetheless, Greenaway discloses the substantially planar regions of annular attenuator (210) as comprising a semi-transparent metal layer (Col. 3, lines 25 – 30). It will be appreciated that, in order to attenuate the beam, such a layer *inherently* has *some* optical density. Further, Greenaway teaches that the purpose of the annular attenuator is to provide the “optimum ratio” between the reference and object beam intensities (Col. 1, lines 59 – 61). Thus, in practicing the invention of Greenaway, it appears that one of ordinary skill would have arrived at an optical density (of the attenuator) between 0.1 and 5.0 through only routine experimentation in the process of providing an optimum attenuation that provides the “optimum” beam intensity ratio, as

Art Unit: 2872

suggested by Greenaway. Further, barring any *unexpectedly* improved result arising from the particular selection of a beam intensity ratio lying between 0.1:1 – 100:1, it appears that one of ordinary skill would have arrived at such a ratio, through only routine experimentation in discovering the “optimum” ratio discussed by Greenaway.

Claim 91 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenaway (U.S. Patent number 3,602,570), in view of Graham, et al (U.S. Patent number 4,952,798). As set forth above for claims 1 and 73, Greenaway suggests the invention substantially as claimed. Further, Greenaway expressly teaches that the semitransparent layer may be formed of a metal film layer. However, Greenaway does not disclose the semi-transparent layer as particularly being chrome.

Graham, et al discloses an optical attenuator wherein the attenuation is provided by a semi-transparent film. Graham, et al teaches that chrome was well known to be suited for use in a semi-transparent layer that provides optical attenuation (Col. 4, lines 10 – 25).

It would have been obvious to one of ordinary skill to use chrome as the attenuating metal layer of Greenaway, since Graham, et al suggests that chrome is suitable for such use. It has been held that the selection of a known material, based upon its known suitability for a given use, does not represent a patentable advance.

Allowable Subject Matter

The previous indication of allowable subject matter is withdrawn, in light of Applicants' failure to perfect a claim for domestic priority. The examiner regrets the

Art Unit: 2872

delay in applying the pre-grant publication of Parker, et al, and apologizes for any inconvenience.

Response to Amendment

Applicants' submission of a new abstract is noted with appreciation as overcoming the previous objection thereto.

Applicants' amendment of claims 2 and 78 is sufficient in overcoming the previous objections thereto. The cancellation of claim 4 renders the previous objection moot.

Applicants' amendment of claim 20 overcomes the previous rejection of claim 20/2 under 35 U.S.C. §112, second paragraph.

The previous rejection of claims 1, 2, 5, 70, 71, 72, 74, and 75 under 35 U.S.C. §102(b) as being anticipated by Kojima, et al (U.S. Patent number 4,312,559) has been overcome by Applicants' amendment of claim 1. While Kojima, et al disclose a non-opaque mask which may be divided into substantially planar regions, they do not disclose an illumination beam on-axis cause one or more transparent elements to create object wavefronts, as now recited.

For the reasons argued by Applicants in their remarks, the previous rejection of claims 1, 2, and 5 under §102(b) as being anticipated by Lungershausen, et al (U.S. Patent number 5,258,863) has been overcome by the amendment of claim 1.

Art Unit: 2872


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (571) 272-2314. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Drew Dunn whose number is (571) 272-2312 and who can be reached on Mon.- Thu., 9 - 5.

The centralized fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for *all* communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2800.


JOHN JUBA, JR.
PRIMARY EXAMINER
Art Unit 2872

January 19, 2005

Continuation of Disposition of Claims: Claims pending in the application are 1-3, 5, 20/2, 20/7, 20/12, 20/17, 21-26, 70-76, 78, 81, 90, and 91.